



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

- XIV. "Account of the Construction of a Standard Barometer, and of the Apparatus and Processes employed in the Verification of Barometers at the Kew Observatory." By JOHN WELSH. Communicated by J. P. GASSIOT, Esq., F.R.S., Chairman of the Kew Observatory Committee of the British Association.

(Abstract.)

After stating the results of experiments, made under the superintendence of the Kew Committee, for the construction of a barometer tube of large diameter by the usual method of boiling the mercury in the tube, the author proceeds to describe a method of filling a tube with the aid of an air-pump. In this process, which is fully detailed in the paper, the tube is so constructed, that when the air has been extracted from it, the mercury enters by atmospheric pressure, provision being made for entirely removing the air which the air-pump has failed to extract. By this method a barometer tube of 1.1 inch internal diameter has been satisfactorily prepared at the Kew Observatory. The author then describes the mounting and mode of observing the standard barometer, proceeds to explain the processes adopted in the verification of barometers, and gives a detailed description of the apparatus for determining the errors of barometers at different atmospheric pressures.

- XV. "On the Aurora." By REUBEN PHILLIPS, Esq. Communicated by Professor STOKES, Sec. R.S. Received March 7, 1856.

In this paper the author enters into various speculations as to the formation and motion of auroral arches. Since it has been found by experiment that the maximum length of the voltaic arc with a given battery is nearly the same in atmospheric air and in highly rarefied air, forming a very perfect vacuum, the author conceives that a streamer begins as a disruptive discharge of finite and very moderate length, (the maximum length very nearly of a continuous discharge,) which starts upwards from the auroral arch, which he